

CLAIMS

1. An automatic dishwashing detergent composition comprising:
 - a) from about 0.01% and about 70%, by weight of the composition of a glasscare active salt;
 - b) at least one detergent component;
 - c) optionally at least one adjunct material; and
 - d) balance water;

wherein said composition is in the form of a liquid, liquid gel, gel, paste, cream, or combinations thereof; and wherein said glasscare active salt is encapsulated via at least one encapsulating agent which provides at least one encapsulating coating to said glasscare active salt.

2. A composition according to Claim 1, wherein said glasscare active salt is in the form of a core particle, aggregate of core particles, prill, agglomerate, or combinations thereof, and is nonfriable, water-soluble or water dispersible or which dissolve, disperse, or melt in a temperature range of from about 40° C to about 50° C.

3. A composition according to Claim 1, wherein the release of said glasscare active salt to the wash and/or rinse liquor is triggered by the dissolution or disruption of said at least one encapsulating coating.

4. A composition according to Claim 1, wherein said liquid composition delivers from about 0.1 mM to about 10 mM of said glasscare active salt or complex to said wash and/or rinse liquor.

5. A composition according to Claim 1, wherein said glasscare active salt comprises at least one of the following: aluminum, zinc, magnesium, calcium, lanthanum, tin, gallium, strontium, titanium, or mixtures thereof.

6. A composition according to Claim 5, wherein said glasscare active salt comprises at least one of the following: water-soluble aluminum salt, water-insoluble aluminum salt, slightly water-soluble aluminum salt, water-soluble zinc salt, water-insoluble zinc, slightly water-soluble zinc salt, water-soluble magnesium salt, water-insoluble magnesium salt, slightly water-soluble

magnesium salt, water-soluble calcium salt, water-insoluble calcium salt, slightly water-soluble calcium salt, or mixtures thereof.

7 A composition according to Claim 6, wherein said aluminum salt is aluminum sulfate.

8. A composition according to Claim 1, wherein said at least one detergent component comprises at least one of the following: an alkalinity source, builder, surfactant, suds suppressor, enzyme, thickener, bleaching system, adjunct materials, or mixtures thereof.

9. A composition according to Claim 8, wherein said bleaching system comprises at least one of the following: bleaching agents comprising at least one of the following: chlorine bleach, oxygen bleach, or mixtures thereof; organic peroxyacid bleach precursors; transition metal-containing bleach catalysts; bleach activators; or mixtures thereof.

10. A composition according to Claim 1, wherein said dissolution or disruption of said at least one encapsulating coating occurs via a release mechanism triggered by at least one of the following release mechanism: time, temperature, hardness, interfacial tension, pH-sensitive, mechanical action, ionic strength, dilution, or combinations thereof.

11. A composition according to Claim 1, wherein said at least one encapsulating agent comprises at least one of the following: fatty acids, polyvinyl alcohol, polyethylene glycols, builders, water-soluble cellulose and/or cellulose ether, polymers, polymer latex; polycarboxylate materials, ethylene vinyl acetate, polyvinyl alcohol, polyethylene waxes of melting point 50°-65° C, natural waxes, paraffin or microcrystalline waxes having melting points of 40°-94° C, liquid paraffin waxes, a alcohol waxes, synthetic resin, silicone oil, petroleum jelly, inorganic coatings, or mixtures thereof.

12 A composition according to Claim 11, wherein said at least one encapsulating agent comprises at least one of the following: polymer, polymer latex, polycarboxylate material, ethylene vinyl acetate, polyvinyl alcohol, or mixtures thereof.

13. A composition according to Claim 12, wherein said polymer comprises at least one of the following: natural gums, pectins, cellulose ethers, PVA, or mixtures thereof.

14. An automatic dishwashing detergent composition comprising:

- e) from about 0.01% and about 70%, by weight of the composition of a glasscare active salt;
- f) at least one detergent component;
- g) optionally at least one adjunct material; and
- h) balance water;

wherein said composition is in the form of a granular solid, powder, or combinations thereof; wherein said glasscare active salt is encapsulated via at least one encapsulating agent which provides at least one encapsulating coating to said glasscare active salt; and wherein said encapsulating coating is substantially free of low critical solution temperature polymers.

15. A composition according to Claim 14, wherein said glasscare active salt is in the form of a core particle, aggregate of core particles, prill, agglomerate, or combinations, and is nonfriable, water-soluble or water dispersible or which dissolve, disperse, or melt in a temperature range of from about 40° C to about 50° C.

16. A composition according to Claim 14, wherein the release of said glasscare active salt to the wash and/or rinse liquor is triggered by the dissolution or disruption of said at least one encapsulating coating.

17. A composition according to Claim 14, wherein said liquid composition delivers from about 0.1 mM to about 10 mM of said glasscare active salt or complex to said wash and/or rinse liquor.

18. A composition according to Claim 14, wherein said glasscare active salt comprises at least one of the following: aluminum, zinc, magnesium, calcium, lanthanum, tin, gallium, strontium, titanium, or mixtures thereof.

19. A composition according to Claim 18, wherein said glasscare active salt comprises at least one of the following: water-soluble aluminum salt, water-insoluble aluminum salt, slightly water-soluble aluminum salt, water-soluble zinc salt, water-insoluble zinc, slightly water-soluble zinc salt, water-soluble magnesium salt, water-insoluble magnesium salt, slightly water-soluble magnesium salt, water-soluble calcium salt, water-insoluble calcium salt, slightly water-soluble calcium salt, or mixtures thereof.

20 A composition according to Claim 19, wherein said aluminum salt is aluminum sulfate.

21. A composition according to Claim 14, wherein said at least one detergent component comprises at least one of the following: an alkalinity source, builder, surfactant, suds suppressor, enzyme, thickener, bleaching system, adjunct materials, or mixtures thereof.

22. A composition according to Claim 21, wherein said bleaching system comprises bleaching agents comprising at least one of the following: chlorine bleach, oxygen bleach, or mixtures thereof, organic peroxyacid bleach precursors, transition metal-containing bleach catalysts, bleach activators, or mixtures thereof.

23. A composition according to Claim 14, wherein said dissolution or disruption of said at least one encapsulating coating occurs via a release mechanism triggered by at least one of the following release mechanism: time, temperature, hardness, interfacial tension, pH-sensitive, mechanical action, ionic strength, dilution, or combinations thereof.

24. A composition according to Claim 14, wherein said at least one encapsulating agent comprises at least one of the following: fatty acids, polyvinyl alcohol, polyethylene glycols, builders, water-soluble cellulose, non-low critical solution polymer, polymer latex; polycarboxylate materials, ethylene vinyl acetate, polyvinyl alcohol, polyethylene waxes of melting point 50°-65° C, natural waxes, paraffin or microcrystalline waxes having melting points of 40°-94° C, liquid paraffin waxes, a alcohol waxes, synthetic resin, silicone oil, petroleum jelly, inorganic coatings, or mixtures thereof.

25 A composition according to Claim 24, wherein said at least one encapsulating agent comprises at least one of the following: non-low critical solution polymer, polymer latex, polycarboxylate material, ethylene vinyl acetate, polyvinyl alcohol, or mixtures thereof.

26. A composition according to Claim 25, wherein said non-low critical solution polymer is substantially free of alkylated and/or hydroxyalkylated polysaccharides, cellulose ethers, polyisopropylacrylamine, copolymers of polyisopropylacrylamide, and mixtures thereof.

27. A composition according to Claim 1, wherein said composition is in the form of a unit dose which allows for the controlled release of said encapsulated glasscare active salt during the wash and/or rinse cycle of said automatic dishwashing appliance; wherein said unit dose is provided as a single or multi-compartment water-soluble pouch.

28. A composition according to Claim 14, wherein said composition is in the form of a unit dose which allows for the controlled release of said glasscare active salt during the wash and/or rinse cycle of said automatic dishwashing appliance; wherein said unit dose is provided as a tablet, single or multi-compartment water-soluble pouch, or combinations thereof.

29. A method of cleaning and protecting glassware comprising the step of washing said glassware in an automatic dishwashing machine with an automatic dishwashing detergent composition according to Claim 1.

30. A method of cleaning soiled glassware may comprise washing the glassware in an automatic dishwashing machine with an automatic dishwashing detergent composition comprising (a) an encapsulated glasscare active salt comprising at least one of the following: aluminum, zinc, magnesium, calcium, lanthanum, tin, gallium, strontium, titanium, or mixtures thereof; (b) at least one detergent component selected from the group consisting of an alkalinity source, builder, surfactant, suds suppressor, enzyme, thickener, bleaching system, solvent, wetting agent, and mixtures thereof; (c) an adjunct material comprising sodium-based anti-corrosion agents, hydrotropes, disrupting agents, colorants, antiredosition agents, free radical inhibitors, polymers, soil release agents, anti-filming agents, anti-spotting agents, hydrotropes, germicides, fungicides, bleach scavengers, general dishcare agents, and mixtures thereof; and (d) balance water; wherein said composition is in the form of a liquid, liquid gel, gel, paste, cream, or combinations thereof.

31. A method of cleaning and protecting glassware comprising the step of washing said glassware in an automatic dishwashing machine with an automatic dishwashing detergent composition according to Claim 14.

32. A method of cleaning and protecting glassware comprising the step of washing said glassware in an automatic dishwashing machine with an automatic dishwashing detergent composition comprising (a) an encapsulated glasscare active salt comprising at least one of the following: aluminum, zinc, magnesium, calcium, lanthanum, tin, gallium, strontium, titanium, or

mixtures thereof; (b) at least one detergent component selected from the group consisting of an alkalinity source, builder, surfactant, suds suppressor, enzyme, thickener, bleaching system, solvent, wetting agent, and mixtures thereof; (c) an adjunct material comprising sodium-based anti-corrosion agents, hydrotropes, disrupting agents, colorants, antiredosition agents, free radical inhibitors, polymers, soil release agents, anti-filming agents, anti-spotting agents, hydrotropes, germicides, fungicides, bleach scavengers, general dishcare agents, and mixtures thereof; and (d) balance water; wherein said composition is in the form of a granular solid, powder, or combinations thereof; wherein said glasscare active salt is encapsulated via at least one encapsulating agent which provides at least one encapsulating coating to said glasscare active salt; and wherein said encapsulating coating is substantially free of low critical solution temperature polymers.

33. An kit comprising:

- (a) a package;
- (b) instructions for use; and
- (c) an automatic dishwashing detergent composition comprising:
 - (i) an encapsulated glasscare active salt comprising at least one of the following: aluminum, zinc, magnesium, calcium, lanthanum, tin, gallium, strontium, titanium, or mixtures thereof.
 - (ii) at least one detergent component selected from the group consisting of an alkalinity source, builder, surfactant, enzyme, thickener, bleaching system, solvent, wetting agent, and mixtures thereof;
 - (iii) optionally an adjunct material; and
 - (iv) balance water;

wherein said composition delivers from about 0.1 mM to about 10 mM of the glasscare active salt or complex in the wash and/or rinse cycle; wherein said composition is a granular solid, powder, liquid, liquid-gel, gel, or combinations thereof; wherein said composition is optionally provided as a tablet or contained in a single or multi-compartment water-soluble pouch, or combinations thereof; and wherein when said composition is a granular solid or powder, said solid composition is substantially free of low critical solution temperature polymers.